IN THE CLAIMS:

Please enter the attached listing of claims into the application. This listing of claims replaces all prior listing of claims in the application.

LISTING OF CLAIMS

1-49. (Cancelled).

50. (Withdrawn) A method for detecting the presence of an analyte in a sample, the method comprising:

Sensing the presence of an analyte in a sample with a sensor array comprising a plurality of sensors each comprising regions of a conductive organic material and a conductive material compositionally different than the conductive organic material, each resistor providing an electrical path through the regions of conducting organic material and the conductive material, a first response when contacted with a first sample comprising a first chemical analyte and a second different response within contacted with a second sample comprising a second different chemical analyte.

51. (Withdrawn) The method of claim 50, wherein the measuring apparatus is an electrical measuring device in electrical communication with at least one sensor.

52. (Withdrawn) The method accordingly to claim 50, wherein the conductive organic material of at least one sensor is different from the conductive organic material of at least one other sensor.

53. (Withdrawn) The sensor array according to claim 50, wherein the conductive material is an inorganic conductor.

54. (Withdrawn) The method according to claim 50, wherein the response is a change in the sensors.

55. (Withdrawn) The method according to claim 50, wherein the conductive organic material of the plurality of sensors are compositionally the same or compositionally different.

56. (Withdrawn) The method according to claim 50, wherein the conductive organic material is selected form the group consisting of polyanilines, emaraldine salt of polyanilines, polypyrroles, polythiophenes, and polyEDOTs, and the conductive material is selected from the group consisting of Ag, Au, Cu, Pt, carbon black, and AuCu.

57. (Withdrawn) The method according to claim 50 or 56, further comprising a temperature control apparatus, the temperature control apparatus I thermal communication with at least one sensor.

58. (Withdrawn) The method according to claim 57, wherein a resistance of sensor is Rn at Temperature Tn when contacted with chemical analyte, where m is an integer greater than 1.

59. (Withdrawn) The method according to claim 50 or 56, wherein the response is a change in impedance.

60. (Withdrawn) The method according to claim 59, wherein the electrical impedance is Zm at frequency θm when contacted with the first chemical analyte, where m is an integer greater than 1 and θm does not equal 0.

61. (Withdrawn) The method according to claim 60, further comprising a temperature control apparatus in thermal communication with at least one sensor.

62. (Withdrawn) The method according to claim 61, wherein the impedance is Zm,n at frequency θm and temperature Tn when contacted with the first chemical analyte, where m and/or n is an integer greater than 1.

63. (Withdrawn) The method according to claim 53, wherein the inorganic conductor is a member selected from the group consisting of Ag, Au, Cu, Pt, carbon black and AuCu.

64. (Withdrawn) The method according to claim 53, wherein the inorganic conductor is carbon black.

65. (Withdrawn) An method according to claim 50, wherein the conductive material is an organic conductor.

66. (Withdrawn) The method according to claim 50, wherein the conductive material is a member selected from the group consisting of an organic conductor, an inorganic conductor or a mixed inorganic-organic conductor.

67. (Withdrawn) The method according to claim 50, wherein the conductive material is a member selected from the group consisting of a metal, a metal alloy, a metal oxide, an organic complex, a semiconductor, a superconductor and a mixed inorganic-organic complex.

68. (Withdrawn) The method according got claim 50, wherein the conductive material is a particle.

69. (Withdrawn) The method according to claim 50, wherein the array comprises a plurality of sensors having a conductive organic material.

70. (Withdrawn) The method according to claim 50, wherein the region of conductive organic material and conductive material is fabricated from a member selected from the group consisting of a colloid, a suspension or a dispersion.

71. (Withdrawn) The method according to claim 50, wherein the region of conductive organic material and conductive material is fabricated from a colloid.

72. (Withdrawn) A method for detecting a microorganism, the method comprising:

Exposing an analyte associated with the microorganism to a sensor array comprising a plurality of sensors electrically connected to an measuring apparatus, wherein each of the sensors comprises regions of a conducting organic material and regions of conducting material compositionally different than the conducting organic material; and

measuring a response through the regions of conducting organic material and the compositionally dissimilar conducting material, thereby detecting the microorganism.

73-84. (Cancelled)

85. (Withdrawn) A method for detecting a disease in a subject, the method comprising,

Contacting an array of sensors with a biological sample suspected of containing an analyte indicative of the disease, wherein each sensor comprises regions of a conductive organic material and a conductive material compositionally different that the conductive organic material; and

detecting the analyte wherein the presence of the analyte is indicative of the disease.

86. (Withdrawn) A method in accordance with claim 85, wherein the array of sensor comprises a member selected from the group consisting of a surface acoustic wave sensor, a quartz microbalance sensor; a conductive composite; a chemiresistor; a metal oxide gas sensor and a conducting polymer sensor, a dye-impregnated polymer film on fiber optic detector, a polymer-coated micro mirror, an electrochemical gas detector, a chemically sensitive field-effect transistor, a carbon black-polymer composite, a micro-electromechanical system device and a micro-opto-electro-mechanical system device.

87. (Withdrawn) The method in accordance with claim 85, further comprising generating a response from the sensor and imputing the response to a neural net trained against known analytes.

88. (Withdrawn) The method in accordance with claim 85, wherein the disease is selected from the group consisting of halitosis, periodontal disease, pneumonia, vaginitis, uremia, trimethyaminuria, lung cancer, dysgensia, dysosnia, cytinuria, and bacterial vaginosis.

89. (Withdrawn) A method in accordance with claim 85, wherein the analyte is an off gas of a member selected from the group consisting of Prevotella intermida, Fusobacterium nucleatum, Porphyromonas gingivalis, Porphyromonas endodontalis, Prevotella loescheii, Hemophilus parainfluenzae, Stomatococcus muci, Treponema denticola, Veillonella species, Peptostreptococcus anarobius, Micros prevotii, Eubacterium limosum, Centipeda periodontii, Selemonad aremidis, Eubacterium secies, Bacteriodoes species, Fusobacterium periodonticum, Prevotella melaninogenica, Lebsiella pneumonia, Enterbacter cloacae, Citrobacter species and Stomatococcus mucilaginous.

90. (Withdrawn) The method in accordance with claim 85, wherein the biological sample is a subject's breath, vaginal discharge, urine, feces, tissue sample, or blood sample.

91-97. (Cancelled).

98. (Currently Amended) A sensor, comprising:

at least two conductive leads;

a sensing area comprising alternating regions of a <u>doped or undoped</u> conductive organic material and a conductive material compositionally different than the conductive organic material disposed between, and in contact with, the at least two conductive leads<u>, wherein the regions of similar material are separated by about</u>

10-1000 angstroms, wherein the sensing area provides an electrical path through the regions of the conductive organic material and the regions of the compositionally different conductive material, and wherein the sensing area is in direct contact with a vapor comprising an analyte to be detected, wherein the compositionally different conductive material is selected from the group consisting of an inorganic conductor, a carbon black, and a mixed inorganic/organic conductor, wherein the inorganic conductor is a metal, a metal alloy, a metal oxide, a superconductor, or a combination thereof and wherein the inorganic conductor has an electrical conductivity that decreases as the temperature increase; and

an apparatus in electrical communication with the conductive leads for detecting a change in the sensing area between the at least two conductive leads when contacted with an analyte.

99. (Previously Presented) The sensor according to claim 98, wherein the conductive organic material is selected from the group consisting of a polyaniline, an emeraldine salt of polyaniline, a polypyrrole, a polythiophene, a polyEDOT, and derivatives thereof.

100. (Previously Presented) The sensor according to claim 98, wherein the compositionally different conductive material is carbon black.

101. (Previously Presented) The sensor according to claim 98, further comprising an insulator or plasticizer.

102. (Previously Presented) The sensor of claim 98, wherein the conductive organic material is an emeraldine salt of polyaniline and the compositionally different conductive material is carbon black.

103. (Previously Presented) The sensor of claim 98, wherein the conductive organic material is a doped polyaniline and the compositionally different conductive material is carbon black.

104. (Currently Amended) A sensor, comprising:

at least two conductive leads;

a sensing area comprising alternating interpenetrating regions of a doped or undoped conductive organic material and a conductive material compositionally different than the conductive organic material disposed between and in contact with the at least two conductive leads, wherein the regions of similar material are separated by about 10-1000 angstroms, wherein the sensing area provides an electrical path through the regions of the conductive organic material and the regions of the compositionally different conductive material, and wherein the sensing area is in direct contact with a vapor comprising an analyte to be detected, wherein the compositionally different conductive material is selected form the group consisting of an organic conductor, an organic complex, an inorganic conductor and a mixed inorganic/organic conductor, wherein the inorganic conductor is a metal, a metal alloy, a metal oxide, or a superconductor, or a combination thereof and wherein the inorganic conductor has an electrical conductivity that decreases as the temperature increases; and

an apparatus in electrical communication with the conductive leads for detecting a change in the sensing area between the at least two conductive leads when contacted with an analyte.

105. (Currently Amended) A sensor, comprising:

at least two conductive leads;

a sensing area comprising dispersed regions of a doped or undoped conductive organic material and a conductive material compositionally different than the conductive organic material wherein the dispersed regions provide interpenetrating regions of the conductive organic material and a conductive material compositionally different than the conductive organic material, wherein the regions of similar material are separated by about 10-1000 angstroms, the sensing area disposed between and in contact with the at least two conductive leads, wherein the sensing area provides an electrical path through the regions of the conductive organic material and the regions of the compositionally different conductive material, and wherein the sensing area is in direct contact with a vapor comprising an analyte

to be detected, wherein the compositionally different conductive material is selected from the group consisting of an organic conductor, an organic complex, an inorganic conductor and a mixed inorganic/organic conductor, wherein the inorganic conductor is a metal, a metal alloy, a metal oxide, or a superconductor, or a combination thereof and wherein the inorganic conductor has an electrical conductivity that decreases as the temperature increases; and

an apparatus in electrical communication with the conductive leads for detecting a change in the sensing area between the at least two conductive leads when contacted with an analyte.

106. (Currently Amended) A sensor, comprising:

at least two conductive leads;

a sensing area comprising alternating interpenetrating regions of a doped or undoped polyaniline or an emeraldine salt of polyaniline and a conductive material compositionally different than the polyaniline or emeraldine salt of polyaniline disposed between, and in contact with, the at least two conductive leads, wherein the regions of similar material are separated by about 10-1000 angstroms, wherein the sensing area provides an electrical path through the alternating interpenetrating regions of polyaniline or emeraldine salt of polyaniline and the conductive material compositionally different than the polyaniline or emeraldine salt of polyaniline; and

an apparatus in electrical communication with the conductive leads for detecting a change in the sensing area between the at least two conductive leads when contacted with an analyte.

107. (Previously Presented) The sensor of claim 106, wherein the conductive material compositionally different than the polyaniline or emeraldine salt of polyaniline is selected from the group consisting of an organic conductor, an organic complex, an inorganic conductor, and a mixed inorganic/organic conductor, wherein the inorganic conductor is a metal, a metal alloy, a metal oxide, an oxidized metal, a superconductor, and any combination thereof.

108. (Currently Amended) A sensor array comprising:

a plurality of sensors, wherein at least one sensor comprises:

at least two conductive leads;

a sensing area comprising alternating interpenetrating regions of a doped or undoped conductive organic material and a conductive material compositionally different than the conductive organic material disposed between an in contact with the at least two conductive leads, wherein the regions of similar material are separated by about 10-1000 angstroms, wherein the sensing area provides an electrical path through the alternating interpenetrating regions of the conductive organic material and the regions of the compositionally different conductive material, wherein the sensing area is in direct contact with a vapor comprising an analyte to be detected, wherein the compositionally different conductive material is selected from the group consisting of an organic conductor, an organic complex, an inorganic conductor and a mixed inorganic/organic conductor, wherein the inorganic conductor is a metal, a metal alloy, a metal oxide, or a superconductor, or a combination thereof and wherein the inorganic conductor has an electrical conductivity that decreases as the temperature increases.

109. (Previously Presented) The sensor array according to claim 108, wherein the sensor array comprises a plurality of sensors each comprising regions of a conductive organic material and regions of a conductive material compositionally different than the conductive organic material wherein the conductive organic material of at least one sensor is different from the conductive organic material of at least one other sensor.

110. (Previously Presented) The sensor array according to claim 108, wherein the compositionally different conductive material is an inorganic conductor.

111. (Cancelled).

112. (Previously Presented) The sensor array according to claim 159, wherein the conductive organic material of one sensor of the plurality of sensors is compositionally different than at least one other sensor of the plurality of sensors.

113. (Previously Presented) The sensor array according to claim 108, wherein the conductive organic material is selected from the group consisting of a polyaniline, an emeraldine salt of polyaniline, a polypyrrole, a polythiophene, and a polyEDOT, and the conductive material compositionally different than the conductive organic material is selected from the group consisting of Ag, Au, Cu, Pt, carbon black, and AuCu.

114. (Previously Presented) The sensor array according to claim 108 or 113, further comprising a temperature control apparatus in thermal communication with at least one sensor.

115. (Previously Presented) The sensor array according to claim 108 or 113, further comprising an apparatus for detecting a change selected from the group consisting of resistance, conductance, impedance, and capacitance in the electrical properties of at least one sensor.

116. (Previously Presented) The sensor array according to claim 115, further comprising a temperature control apparatus in thermal communication with at least one sensor.

117. (Previously Presented) The sensor array according to claim 110, wherein the inorganic conductor is selected from the group consisting of Ag, Au, Cu, Pt, and AuCu.

118. (Previously Presented) The sensor array according to claim 108, wherein the compositionally different conductive material is carbon black.

119. (Previously Presented) The sensor array according to claim 108, wherein the compositionally different conductive material is an organic conductor.

120. (Previously Presented) The sensor array according to claim 108, wherein the conductive material compositionally different than the conductive organic material is a member selected from the group consisting of an organic conductor, an inorganic conductor, and a mixed inorganic/organic conductor.

121. (Previously Presented) The sensor array according to claim 108, wherein the conductive material compositionally different than the conductive organic material is a member selected from the group consisting of a metal, a metal alloy, a metal oxide, an organic complex, a superconductor, and a mixed inorganic/organic conductor.

122. (Previously Presented) The sensor array according to claim 108, wherein the compositionally different conductive material is a particle.

123. (Previously Presented) The sensor array according to claim 159, wherein the compositionally different conductive material of each of the sensors in the plurality of sensors comprises a conductive organic material.

124-125. (Cancelled).

126. (Currently Amended) A sensor array comprising:

a plurality of sensors, wherein at least one sensor comprises:

at least two conductive leads;

a sensing area comprising alternating interpenetrating regions of a doped or undoped conductive organic material and a conductive material compositionally different than the conductive organic material disposed between, and in contact with, the at least two conductive leads, wherein the regions of similar material are separated by about 10-1000 angstroms, wherein the sensing area provides an electrical path through the regions of the conductive organic material and the regions of the compositionally different conductive material, wherein the sensing area is in direct contact with a vapor comprising an analyte to bet detected, wherein the compositionally different conductive material is selected form the group consisting of

an organic conductor, an organic complex, an inorganic conductor, and a mixed inorganic/organic conductor, wherein the inorganic conductor is a metal a metal alloy, a metal oxide, a superconductor, or a combination thereof, wherein the inorganic conductor has an electrical conductivity that decreases as the temperature increases; and

a measuring apparatus electrically coupled to the at least two conductive leads for detecting a change in the sensing area when contacted with an analyte.

127. (Currently Amended) A sensor array comprising:

a plurality of sensor wherein at least one sensor comprise alternating interpenetrating regions of a doped or undoped conductive organic material and regions of a compositionally different conductive material wherein the sensors are in direct contact with a vapor comprising an analyte to be detected, wherein the regions of similar material are separated by about 10-1000 angstroms, wherein the compositionally different conductive material is selected form the group consisting of an organic conductor, an organic complex, an inorganic conductor, and a mixed inorganic/organic conductor, wherein the inorganic conductor is a metal a metal alloy, a metal oxide, a superconductor, or a combination thereof, wherein the inorganic conductor has an electrical conductivity that decreases as the temperature increases; and

means, electrically coupled to the plurality of sensors, for detecting a change in the plurality of sensors when contacted with an analyte.

128. (Currently Amended) A sensor array system comprising:

a plurality of sensors, wherein at least one sensor comprises:

at least two conductive leads;

a sensing area comprising alternating interpenetrating regions of a doped or undoped conductive organic material and a conductive material compositionally different than the conductive organic material disposed between and in contact with the at least two conductive leads, wherein the regions of similar material are separated by about 10-1000 angstroms, wherein the sensing area provides an electrical path through the regions of the conductive organic material and the regions

of the compositionally different conductive material, wherein the sensing area is in direct contact with a vapor comprising an analyte to be detected, wherein the compositionally different conductive material is selected from the group consisting of an organic conductor, an organic complex, an inorganic conductor and a mixed inorganic/organic conductor, wherein the inorganic conductor is a metal, a metal alloy, a metal oxide, or a superconductor or a combination thereof and wherein the inorganic conductor has an electrical conductivity that decreases as the temperature increases;

a measuring apparatus that detects a change in the electrical properties of the at least one sensor, wherein at least one sensor is in communication with the measuring apparatus; and

a computer comprising a resident algorithm, wherein the computer processes the change in the electrical properties.

129. (Previously Presented) The sensor array system according to claim 128, wherein the measuring apparatus is an electrical measuring device.

130. (Previously Presented) The sensor array system according to claim 128, wherein the compositionally different conductive material is an inorganic conductor.

131. (Previously Presented) The sensor array system according to claim 128, wherein the plurality of sensors each comprise regions of a conductive organic material and regions of a conductive material compositionally different than the conductive organic material.

132. (Previously Presented) The sensor array system according to claim 131, wherein the conductive organic material of at least one sensor is different from the conductive organic material of at least one other sensor.

133. (Previously Presented) The sensor array system according to claim 131, wherein the conductive organic material of the plurality of sensors are compositionally the same.

134. (Previously Presented) The sensor array system according to claim 128, wherein the change in electrical properties is selected from the group consisting of impedance, conductance, capacitance, inductance, and resistance in the sensors.

135. (Previously Presented) The sensor array system according to claim 128, wherein the conductive organic material is selected from the group consisting of a polyaniline, an emeraldine salt of polyaniline, a polypyrrole, a polythiophene, and a polyEDOT, and the conductive material compositionally different than the conductive organic material is selected from the group consisting of Ag, Au, Cu, Pt, carbon black, and AuCu.

136. (Previously Presented) The sensor array system according to claim 128 or 135, further comprising a temperature control apparatus in thermal communication with at least one sensor.

137. (Previously Presented) The sensor array system according to claim 128 or 135, wherein the change in electrical properties is a change in an electrical impedance.

138. (Previously Presented) The sensor array system according to claim 137, further comprising a temperature control apparatus in thermal communication with at least one sensor.

139. (Previously Presented) The sensor array system according to claim 130, wherein the inorganic conductor is a member selected from the group consisting of Ag, Au, Cu, Pt, and AuCu.

140. (Previously Presented) The sensor array system according to claim 128, wherein the compositionally different conductive material is carbon black.

141. (Previously Presented) The sensor array system according to claim 128, wherein the compositionally different conductive material is an organic conductor.

142. (Previously Presented) The sensor array system according to claim 128, wherein the conductive material compositionally different than the conductive organic material is selected from the group consisting of an organic conductor, an inorganic conductor, and a mixed inorganic/organic conductor.

143. (Previously Presented) The sensor array system according to claim 128, wherein the conductive material compositionally different than the conductive organic material is selected from the group consisting of a metal, a metal alloy, a metal oxide, an organic complex, a superconductor, and a mixed inorganic/organic conductor.

144. (Previously Presented) The sensor array system according to claim 128, wherein the compositionally different conductive material is a particle.

145. (Previously Presented) The sensor array system according to claim 128, wherein each of the sensors comprises a conductive organic material.

146. (Previously Presented) The sensor array system according to claim 128, wherein the conductive organic material is an organic polymer.

147. (Previously Presented) The sensor array system according to claim 128, wherein the resident algorithm is a member selected from the group consisting of principal component analysis, Fisher linear analysis, neural networks, genetic algorithms, fuzzy logic, pattern recognition, and combinations thereof.

148. (Previously Presented) A system for identifying a microorganism, the system comprising:

a measuring apparatus;

a sensor array comprising a plurality of sensors in communication with the measuring apparatus, wherein at least one sensor comprises:

at least two conductive leads;

a sensing area comprising alternating regions of a doped or undoped conductive organic material and a conductive material compositionally different than the conductive organic material disposed between and in electrical communication with the at least two conductive leads, wherein the regions of similar material are separated by about 10-1000 angstroms, wherein the compositionally different conductive material is selected form the group consisting of an organic conductor, an organic complex, an inorganic conductor, and a mixed inorganic/organic conductor, wherein the inorganic conductor is a metal a metal alloy, a metal oxide, a superconductor, or a combination thereof, wherein the inorganic conductor has an electrical conductivity that decreases as the temperature increases, wherein the sensing area provides an electrical path through the regions of the conductive organic material and the regions of the compositionally different conductive material, and wherein the sensing are is in direct contact with a vapor comprising a biomarker to be detected; and

a computer comprising a resident algorithm;

wherein the measuring apparatus is capable of detecting a response from each sensor in the array wherein the response are indicative of the presence of a biomarker of a microorganism and the computer is capable of assembling the responses into a response profile whereby the computer associates the response profile indicative of the biomarker with a microorganism for microorganism identification.

149. (Previously Presented) The system for identifying a microorganism in accordance with claim 148, wherein the resident algorithm of the computer is a member selected from the group consisting of principal component analysis, Fisher linear analysis, neural networks, genetic algorithms, fuzzy logic, pattern recognition, and combinations thereof.

150. (Previously Presented) The system for identifying a microorganism in accordance with claim 148, further comprising the steps of:

providing an information storage device coupled to the measuring apparatus; and

storing information in the information storage device.

151. (Previously Presented) The system for identifying a microorganism in accordance with claim 148, wherein the measuring apparatus includes a digital-analog converter.

152. (Currently Amended) A system for detecting an analyte in a sample, comprising:

a substrate having a plurality of sensors wherein at least one sensor comprises:

at least two conductive leads;

a sensing area comprising alternating interpenetrating regions of a doped or undoped conductive organic material and a conductive material compositionally different than the conductive organic material disposed between, and in contact with, the at least two conductive leads, wherein the regions of similar material are separated by about 10-1000 angstroms, wherein the sensing area provides an electrical path through the regions of the conductive organic material and the regions of the compositionally different conductive material such that the at least one sensor provides a response that varies according to the presence of an analyte in contact with it, wherein the sensing area is in direct contact with a vapor comprising an analyte to be detected, wherein the compositionally different conductive material is selected form the group consisting of an organic conductor, an organic complex, an inorganic conductor and a mixed inorganic/organic conductor, wherein the inorganic conductor is a metal, a metal alloy, a metal oxide, or a superconductor, or a combination thereof and wherein the inorganic conductor has an electrical conductivity that decreases as the temperature increases;

a detector operatively associated with the plurality of sensors, for measuring the response of the plurality of sensor when contacted with the sample;

a sample delivery unit for delivering the sample to be tested to the plurality of sensors; and

an information storage and processing device configured to store an ideal response for a predetermined analyte and to compare the response of the plurality of sensor with the stored ideal response, to detect the presence of the analyte in the sample.

153. (Previously Presented) The system in accordance with claim 152, wherein the information storage and processing device is configured to store ideal responses for a plurality of predetermined analytes; and

the information storage and processing device further is configured to compare the response of the plurality of sensors with the plurality of stored ideal responses, to detect the presence of each analyte in the sample.

154. (Previously Presented) The system in accordance with claim 152, wherein the sample is a liquid and the sample delivery unit comprises:

a flow passage interconnecting the substrate comprising the plurality of sensor with a mixture containing the liquid;

a gas-permeable, liquid-impermeable shield interposed in the flow passage; and

a device for extracting vapor from the liquid and for delivering the extracted vapor along the flow passage to the substrate comprising the plurality of sensors via the flow passage.

155. (Previously Presented) The system in accordance with claim 152, wherein the sample is gaseous and the sample delivery unit comprises:

a gas flow passage; and

a pump for pumping the gaseous sample to the substrate comprising the plurality of sensors via the gas flow passage.

156. (Previously Presented) The system in accordance with claim 152, wherein the sample is a vapor extracted from a solid and the sample delivery unit comprises:

a vapor flow passage; and

a pump for pumping the vapor extracted from the solid to the substrate comprising the plurality of sensors via the vapor flow passage.

157. (Previously Presented) The system in accordance with claim 152, wherein the detector detects a member selected from the group consisting of electromagnetic energy, optical properties, resistance, capacitance, inductance, impedance, and combinations thereof.

158. (Previously Presented) The system in accordance with claim 152, wherein at least one other sensor I the plurality of sensors comprises a member selected from the group consisting of a surface acoustic wave sensor; a quartz microbalance sensor; a conductive composite; a chemiresistor; a metal oxide gas sensor; a conducting polymer sensor; a dye-impregnated polymer film on fiber optic detector; a polymer-coated micromirror; an electrochemical gas detector; a chemically sensitive field-effect transistor; a carbon black-polymer composite; a micro-electro-mechanical system device; and a micro-opto-electro-mechanical system device.

159. (Previously Presented) The sensor array of claim 108, wherein the plurality of sensors comprise at least two conductive leads and a sensing area comprising alternating interpenetrating regions of a conductive organic material and a conductive material compositionally different than the conductive organic material disposed between and in electrical communication with the at least two conductive leads.